



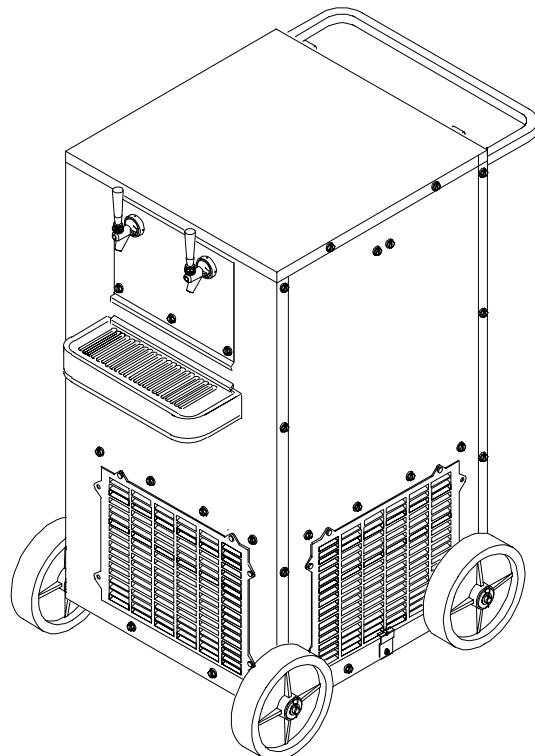
REMCOR®

IMI CORNELIUS INC ■ One Cornelius Place ■ Anoka, MN 55303-6234
Telephone (800) 238-3600 Facsimile (612) 422-3246

Installation Manual

1550 UNIVERSAL BEER DISPENSER

(R-404A REFRIGERANT)



Part No. 569000246
August 11, 1998
Revised: June 11, 1999
Control Code A

THIS DOCUMENT CONTAINS IMPORTANT INFORMATION

This Manual must be read and understood before installing or operating this equipment

TABLE OF CONTENTS

	Page
SAFETY INFORMATION	1
RECOGNIZE SAFETY INFORMATION	1
UNDERSTAND SIGNAL WORDS	1
FOLLOW SAFETY INSTRUCTIONS	1
CO2 (CARBON DIOXIDE) WARNING	1
SHIPPING, STORING, OR RELOCATING UNIT	1
GENERAL INFORMATION	3
GENERAL DESCRIPTION	3
WARRANTY REFERENCE INFORMATION	3
DESIGN DATA	3
THEORY OF OPERATION	4
INSTALLATION	7
UNPACKING AND INSPECTION	7
SELECTING LOCATION	7
INSTALLATION	8
INSTALLING ELECTRICAL OUTLET (ITEM 4)	8
SEALING UNIT TO FLOOR REQUIREMENT (UNIT NOT EQUIPPED WITH HANDLE AND WHEELS)	8
FILL WATER TANK AND START REFRIGERATION SYSTEM	8
CONNECTING CO2 SYSTEM TO BEER KEG TAPPERS	9
CONNECTING BEER SOURCE SUPPLIES TO UNIT	9
PREPARING UNIT FOR OPERATION	9
UNIT OPERATION	10
OPERATOR'S INSTRUCTIONS	11
PROPER BEER STORAGE	11
OPERATING CONTROLS	11
BEER FAUCET	11
UNIT POWER SWITCH (115 VAC, 60 HZ UNIT ONLY)	11
UNIT OPERATION	11
DAILY PRE-OPERATION CHECK	11
OPERATING CLEARANCES	12
ADJUSTMENTS	12
ADJUSTING CO2 REGULATORS	12
ADJUSTING DISPENSED BEER FLOW RATE	12
COOLING UNIT MAINTENANCE	12
CLEANING CONDENSER COIL	12
CHECKING ICE WATER BATH	13
CLEANING AND SANITIZING	13
DAILY CLEANING	13
SANITIZING BEER SYSTEMS	13
REPLENISHING CO2 SUPPLY	13
REPLENISHING BEER SUPPLY	13
CLEANING CO2 SYSTEM GAS CHECK VALVES	13

TABLE OF CONTENTS (cont'd)

	Page
SERVICE AND MAINTENANCE	15
PREPARING UNIT FOR SHIPPING, RELOCATING, OR STORING	15
ADJUSTMENTS	15
UNIT MAINTENANCE	18
CLEANING CONDENSER COIL	18
CHECKING ICE WATER BATH	19
CLEANING WATER TANK	19
CLEANING AND SANITIZING	20
DAILY CLEANING	20
SANITIZE BEER SYSTEMS	20
REPLENISHING CO2 SUPPLY	21
REPLENISHING BEER SUPPLY	22
CLEANING CO2 GAS CHECK VALVE	23
TROUBLESHOOTING	25
NO CO2 GAS PRESSURE ON BEER SYSTEMS.	25
INSUFFICIENT CO2 GAS PRESSURE ON BEER SYSTEMS.	25
DISPENSED BEER FLOW RATE TOO LOW.	25
DISPENSED BEER FLOW RATE TOO HIGH.	26
OFF-TASTE BEER (SOUR AND UNPALATABLE).	26
DISPENSED BEER FLAT (DISAPPEARING FOAM).	26
DISPENSED BEER TEMPERATURE TOO WARM	26
EXCESSIVE FOAMING (WILD BEER) WHILE BEER IS BEING DISPENSED..	26
COMPRESSOR DOES NOT OPERATE.	27
COMPRESSOR WILL NOT STOP AFTER GLYCOL (COOLANT) HAS BEEN SUFFICIENTLY COOLED.	27
COMPRESSOR OPERATES CONTINUOUSLY BUT DOES NOT COOL GLYCOL (COOLANT) SUFFICIENTLY.	27
CONDENSER FAN MOTOR NOT OPERATING.	27
REFRIGERATION COMPRESSOR NOT OPERATING	28
WARRANTY	29

LIST OF FIGURES

FIGURE 1. 1550 UNIVERSAL BEER DISPENSER	4
FIGURE 2. FLOW DIAGRAM	5
FIGURE 3. 1550 UNIVERSAL BEER DISPENSER	12
FIGURE 4. DISPENSER COMPONENTS	16
FIGURE 5. PARTS IDENTIFICATION	17
FIGURE 6. BEER FAUCET ADJUSTMENT	18
FIGURE 7. CO2 GAS CHECK VALVE	22
FIGURE 8. WIRING DIAGRAM	24

LIST OF TABLES

TABLE 1. DESIGN DATA	3
TABLE 2. LOOSE-SHIPPED PARTS	7

SAFETY INFORMATION

Recognize Safety Information

This is the safety-alert symbol. When you see this symbol on our machine or in this manual, be alert to the potentially of personal injury.

Follow recommended precautions and safe operating practices.



Understand Signal Words

A signal word - **DANGER**, **WARNING**, OR **CAUTION** is used with the safety-alert symbol. **DANGER** identifies the most serious hazards.

Safety signs with signal word **DANGER** or **WARNING** are typically near specific hazards.

General precautions are listed on **CAUTION** safety signs. **CAUTION** also calls attention to safety messages in this manual.



Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Learn how to operate the machine and how to use the controls properly. Do not let anyone operate the machine without instructions. Keep your machine in proper working condition. Unauthorized modifications to the machine may impair function and/or safety and affect the machine life.

CO₂ (Carbon Dioxide) Warning

CO₂ Displaces Oxygen. Strict Attention *must* be observed in the prevention of CO₂ (carbon dioxide) gas leaks in the entire CO₂ system. If a CO₂ gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Shipping, Storing, Or Relocating Unit

CAUTION: Before shipping, storing, or relocating this Unit, the beer systems must be sanitized and all sanitizing solution *must* be purged from the beer systems. A freezing ambient temperature will cause residual water remaining inside the Unit to freeze resulting in damage to internal components of the Unit.

THIS PAGE LEFT BLANK INTENTIONALLY

GENERAL INFORMATION

IMPORTANT: To the user of this manual – This manual is a guide for installing, operating, and maintaining this equipment. Refer to the Table of Contents for page location for detailed information pertaining to questions that arise during installation, operation, service, or maintenance of this equipment.

GENERAL DESCRIPTION

The 1550 Universal Beer Dispenser (see Figure 1) is equipped with manually operated self-closing beer faucets. The Unit that is not equipped with a handle and wheels may be installed free standing or under a counter or bar. The Unit that is equipped with a handle and wheels makes it a mobile Unit. The refrigeration system is equipped with a 3/4 H.P. compressor that is easily accessible for service and maintenance.

This Unit must be installed and serviced by a qualified Service Person. This Unit contains no User serviceable parts.

Installation of LOOSE-SHIPPED PARTS (see Table 2), filling the water tank with water, connection to beer kegs with regulated CO₂ gas pressure, and connection to an electrical outlet with proper electrical requirements is all that is required to set the Unit up for operation.

WARRANTY REFERENCE INFORMATION

Warranty Registration Date (to be filled out by customer)	
Unit Part Number:	
Serial Number:	
Install Date:	
Local Authorized Service Center:	

DESIGN DATA

Table 1. Design Data	
Unit Part Numbers:	See Unit Nameplate
Overall Dimensions:	
Height	42-1/2 inches
Width	21-3/4-inches
Depth (with drip tray)	31-1/2 inches
Weights:	
Shipping (1 Carton)	189 pounds
Dry Weight	170 pounds
With Water Tank Full of Water	403 pounds
Ice Bank Weight	120 pounds
Capacities:	
Unit Water Bath (no ice bank) approx.	28 gallons
Refrigerant Requirement	See Unit Nameplate
Ambient Operating Temperature	40° F to 100° F

Table 1. Design Data (cont'd)

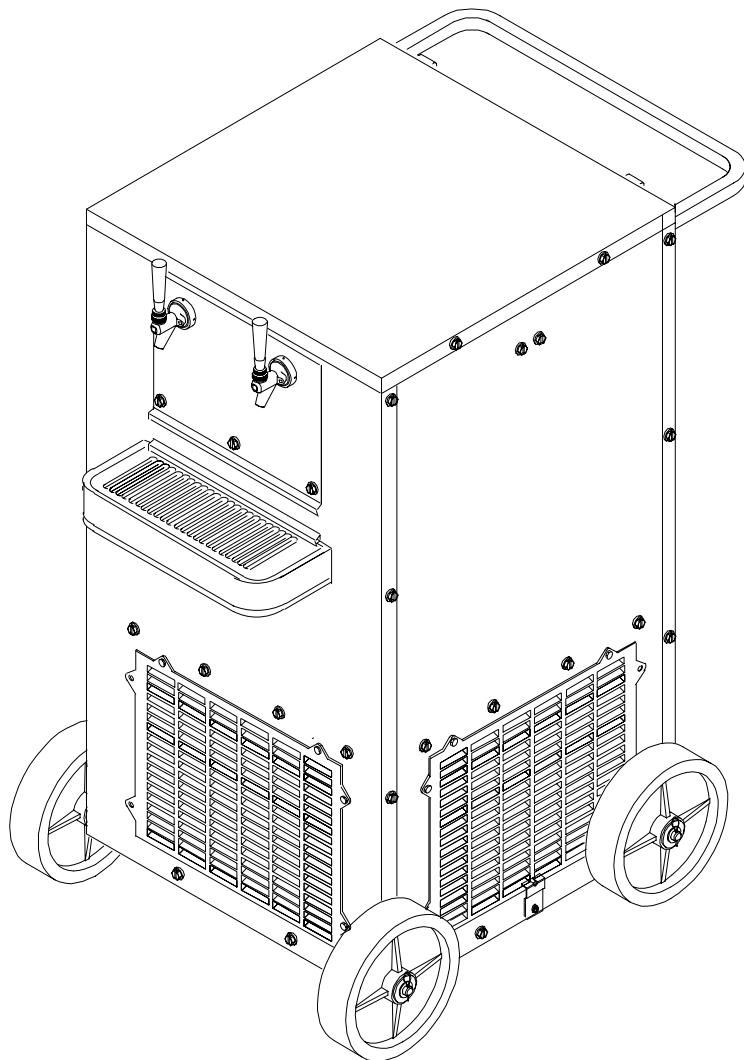
Electrical Requirements:	
Operating Voltage	See Unit Nameplate
Current Draw	See Unit Nameplate

THEORY OF OPERATION

(see Figure 2)

A CO₂ cylinder delivers carbon dioxide (CO₂) gas through adjustable CO₂ regulators to the beer kegs. When dispensing valves are opened, CO₂ gas pressure exerted upon the beer kegs pushes beer from the kegs, through the Unit cooling coils, and on to the beer faucets resulting in cold beer being dispensed.

When the Unit power cord has been plugged into an electrical outlet and the main power switch on back of the Unit (115 VAC, 60 Hz Units only) has been positioned in the "ON" (up) position, the compressor, condenser fan motor, and agitator motor will start and begin forming an ice bank. When a full ice bank has been formed, the compressor and condenser fan motor will stop but the agitator motor will continue to operate, circulating ice water bath in the water tank. The water tank ice bank sensing bulb will cycle the compressor and condenser fan motor on and off as required to maintain a full ice bank.

**FIGURE 1. 1550 UNIVERSAL BEER DISPENSER**

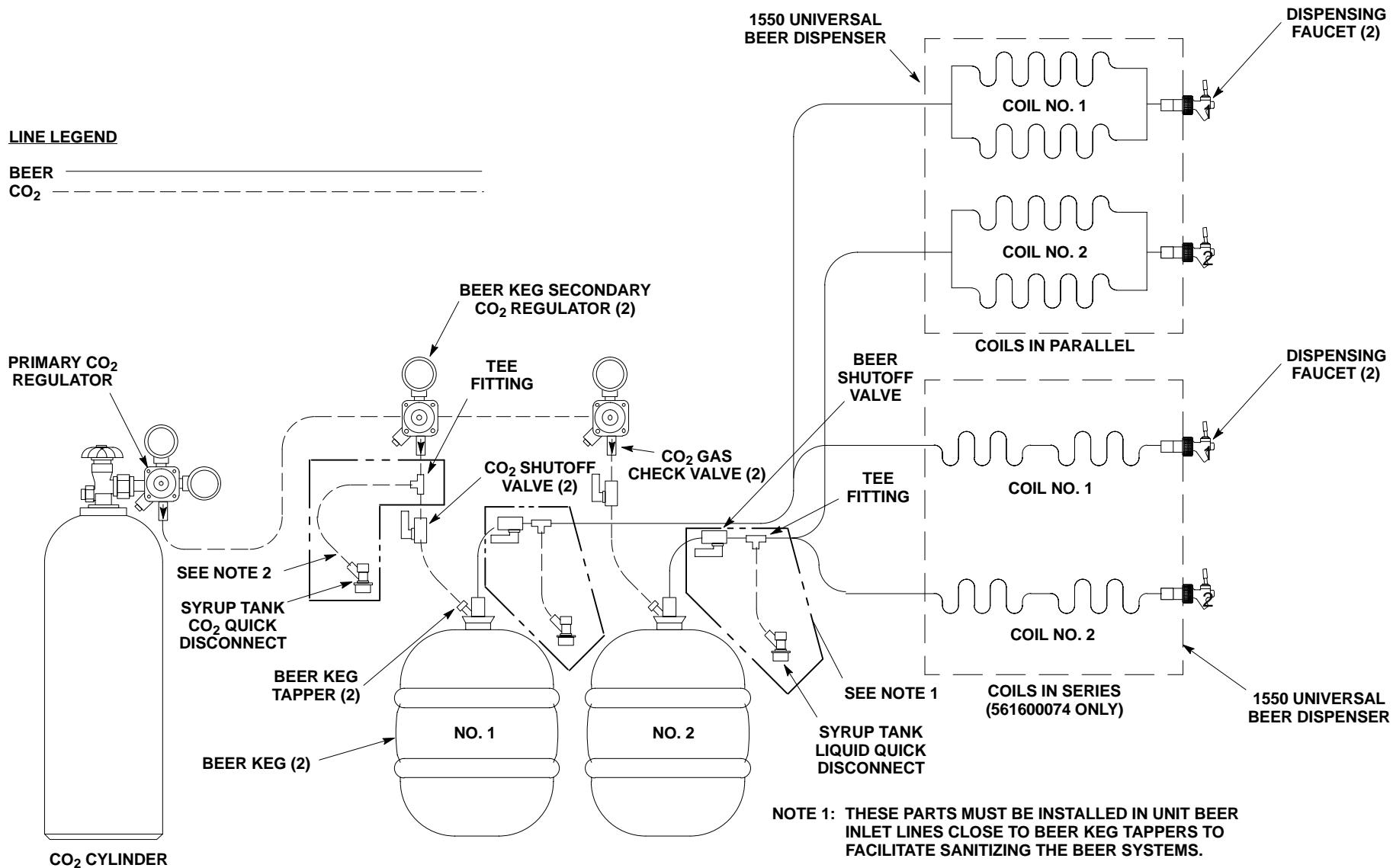


FIGURE 2. FLOW DIAGRAM

THIS PAGE LEFT BLANK INTENTIONALLY

INSTALLATION

This section covers unpacking and inspection, selecting location, installing Unit, preparing for operation, and operation.

UNPACKING AND INSPECTION

NOTE: The Unit was thoroughly inspected before leaving the factory and the carrier has accepted and signed for it. Any damage or irregularities should be noted at the time of delivery (or not later than 15 days from date of delivery) and immediately reported to the delivering carrier. Request a written inspection report from Claims Inspector to substantiate any necessary claim. File claim with the delivering carrier, *not* with IMI Cornelius Inc.

Unpack Unit as follows:

1. After the Unit has been unpacked, remove shipping tape and other packing material.
2. Carefully inspect the Unit for evidence of damage. If evidence of damage or irregularities is present, file a claim with the delivering carrier.
3. Unpack LOOSE-SHIPPED parts. Make sure all items are present and in good condition.

Table 2. Loose-Shipped Parts

Item No.	Part No.	Name	Qty.
1	186573039	Drip Tray	1
2	186642000	Cup Rest	1
3	319941000	Thread Rolling Screw, Hex Washer Hd; No. 8-32 By 1/2-in. Long	4
4	700768	Knob, Beer Valve (Perlick)	2

SELECTING LOCATION



CAUTION: This Unit is intended for indoor installation *only*. Do not install this Unit in an outdoor environment which would expose it to the outside elements.

IMPORTANT: Ambient operating temperature for the Unit Must not exceed 100° F. Satisfactory temperatures may be obtained using blowers, air conditioning, etc. Check local codes.

This Unit may be installed free standing or under a countertop or a bar.

1. Locate the Unit to provide the following minimum clearances:
 - A. A minimum of 12-inches clearance *must* be maintained above the Unit to the nearest obstruction .
 - B. 12-inches between back-side of the Unit and the wall.
 - C. 12-inches on each side of the Unit.
 - D. The front side of the Unit *must* be unobstructed to allow air to enter the Unit.



WARNING: To avoid possible fatal electrical shock or serious injury to the operator, it *is required* that a GFCI (ground fault circuit interrupt) be installed in the electrical circuit for the 115 VAC, 60 Hz Units. It *is required* that an ELCB (earth leakage circuit breaker) be installed in the electrical circuit for the 230 VAC, 50 Hz Units

2. The Unit *must* be installed near a properly grounded electrical outlet with proper electrical requirements. The electrical circuit *must* be properly fused (slow-blow type fuse) or the circuit *must* be connected through an equivalent HACR circuit breaker. The electrical outlet *must* be accessible for ease of connecting and disconnecting the Unit power cord. No other electrical equipment should be connected to this circuit. *REFER TO UNIT NAMEPLATE FOR THE REQUIRED POWER CIRCUIT OPERATING VOLTAGE, HZ, AND THE MINIMUM CIRCUIT AMPACITY OF THE UNIT. ALL ELECTRICAL WIRING MUST CONFORM TO NATIONAL AND LOCAL ELECTRICAL CODES.*

3. **Unit not equipped with handle and wheels.**

Close to a permanent drain to route drip tray drain hose, water tank drain hose, and the water tank overflow tube.

INSTALLATION



WARNING: The Unit *must* be electrically grounded to avoid possible fatal electrical shock or serious injury to the Operator. The Unit power cord is equipped with a three-prong plug. If a three-hole (grounded) electrical outlet is not available, use an approved method to ground the Unit.

SEALING UNIT TO FLOOR REQUIREMENT (UNIT NOT EQUIPPED WITH HANDLE AND WHEELS)

To comply with NSF International (NSF) requirements within the United States, the Unit must be sealed to the floor and all access holes to the Unit base must be closed and sealed. Proceed as follows to seal Unit base to the floor.

1. Place Unit in operating position.
2. Tilt Unit up to expose bottom of its base.
3. Liberally apply silastic sealant such as Dow Corning RTV 731 or equivalent around edges on bottom of the Unit base.

NOTE: Do not move Unit after positioning or seal from Unit base to the floor will be broken.

4. Lower Unit into operating position to complete seal from Unit base to the floor.
5. Apply additional sealant around bottom of the Unit base. Seal must have a minimum radius of 1/2-inch to prevent crevices and to insure a complete seal.

FILL WATER TANK AND START REFRIGERATION SYSTEM

1. Remove four screws securing the Unit top cover, then remove cover.

NOTE: Use low-mineral content water where a local water problem exist.

2. Make sure plug is secure in end of water tank drain hose inside the Unit.
3. Route water tank overflow tube out through hole in back of Unit cabinet to a permanent drain.
4. Fill water tank with clean water until water starts flowing from the overflow tube into the permanent drain.
5. Install Unit top cover and secure with four screws.



WARNING: The Unit *must* be electrically grounded to avoid possible fatal electrical shock or serious injury to the operator. The Unit power cord is equipped with a three-prong plug. If a three-hole (grounded) electrical outlet is not available, use an approved method to ground the Unit.

6. Make sure the main power switch (115 VAC, 60 Hz Unit), located on back side of the Unit, is in the "OFF" (down) position.
7. Plug Unit power cord into electrical outlet. If Unit is 115 VAC, 60 Hz, place main power switch on back side of the Unit in "ON" position.
8. The compressor, condenser fan motor, and the agitator motor will start and begin forming an ice bank. When a full ice bank has been formed, the compressor and condenser fan motor will stop but the agitator motor will continue to operate circulating ice water bath in the water tank. Water will continue to drip from the water tank overflow tube until a full ice bank has been formed, then the tube may be stored inside the Unit.

CONNECTING CO₂ SYSTEM TO BEER KEG TAPPERS

(see Figure 2)



WARNING: CO₂ displaces oxygen. Strict attention *must* be observed in the prevention of CO₂ (carbon dioxide) gas leaks in the entire CO₂ and soft drink system. If a CO₂ gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

Connect CO₂ system to beer keg tappers as shown in Figure 2. *DO NOT INSTALL BEER KEG TAPPERS IN BEER KEGS AT THIS TIME.*

CONNECTING BEER SOURCE SUPPLIES TO UNIT

(see Figure 2)

NOTE: The numbered Unit beer inlet lines are labeled to identify the beer faucets they serve. For example: The line labeled No. "1" is connected to system that provides beer to be dispensed from the No. 1 beer faucet (No. 1 beer faucet is faucet on right side when facing front of the Unit).

1. All Unit beer inlet lines internal connections have been made at the factory. Connect Unit beer inlet lines to beer keg tappers as shown in Figure 2. *DO NOT INSTALL BEER KEG TAPPERS IN BEER KEGS AT THIS TIME.*

NOTE: A short length of tubing, with a syrup tank liquid quick disconnect on it's end (tubing, liquid quick disconnects, and tee fittings not provided), *must* be installed in the beer lines close to the beer keg tappers as shown in Figure 2). Purpose of the liquid quick disconnects is to enable a syrup tank containing sanitizing solution to be connected into the beer systems.

A length of tubing, with a syrup tank CO₂ quick disconnect on it's end (parts not provided), must be installed in one of the beer kegs tappers CO₂ source line as shown in Figure 2). Purpose of the CO₂ quick disconnect is to connect regulated CO₂ gas pressure to the syrup tank containing sanitizing solution.

2. The beer systems should be sanitized at this time as instructed in SERVICE AND MAINTENANCE section of this manual.

PREPARING UNIT FOR OPERATION

(see Figure 2)

1. Make sure primary and secondary CO₂ regulators assemblies adjustment screws are backed out until all tension is relieved from the adjusting screws springs.
2. Make sure shutoff valves, located in CO₂ lines connected between the secondary CO₂ regulators and the beer kegs tappers, are in the closed positions.

3. Open the CO₂ cylinder shutoff valve slightly to allow the primary CO₂ regulator to fill with gas, then open the valve fully to back-seat the valve. Back-seating the valve prevents leakage around the valve shaft.
4. Adjust the primary CO₂ regulator by loosening the regulator adjusting screw lock nut, then turn the adjusting screw to the right (clockwise) until the gage reads 50-PSI. Tighten the adjustment screw lock nut after adjustment has been completed.
5. Adjust beer kegs secondary CO₂ regulators as follows:

The beer kegs secondary CO₂ regulators pressures adjustments require calculations of each beer system total beer system pressure. The total beer system pressure, required to push beer from the beer keg to the dispensing faucet, is the result of computing the length of the beer line of a certain size, vertical line lift, and internal beer keg pressure. The internal beer keg pressure differs from one beer brand to another. Contact your local Beer Distributor for the proper secondary CO₂ regulators pressure settings. Adjust the secondary CO₂ regulators by loosening the adjusting screws lock nuts, then turn the adjusting screws to the right (clockwise) until regulators gages register the recommended pressures. Tighten the adjustments screws lock nuts after adjustments have been completed.

6. Install tappers in the beer kegs.
7. Open shutoff valves located in the CO₂ lines connected between the secondary CO₂ regulators and the beer kegs tappers.

UNIT OPERATION

8. Dispense beer from the beer faucets until all air is purged from the beer systems.
9. Check beer systems for leaks and repair if evident.
10. Adjust beer faucets for beer flow rate as instructed in SERVICE AND MAINTENANCE section of this manual.

OPERATOR'S INSTRUCTIONS

This section covers operating controls, pre-operation check, Unit operation, and maintenance procedures that may be performed by the Operator.

IMPORTANT: Only qualified Personnel should service internal components of the Unit.

PROPER BEER STORAGE

Beer is a perishable product that can be materially changed by improper handling. Undesirable dispensed beer can be created by improper cooling of the beer or lack of cleaning/sanitizing the beer systems. Proper temperature control of stored beer is important. It helps retard growth of mold, yeast, and bacteria that are non-toxic but do affect taste and appearance of the dispensed beer. These organisms can be satisfactorily controlled by maintaining stored beer within a specified temperature range and regularly sanitizing the beer systems. Stored beer temperature should be maintained at 33° F to 40° F.

OPERATING CONTROLS

(see Figure 3)

BEER FAUCET

The beer faucet lever needs only be pulled forward to dispense beer, then close faucet when cup or glass is full.

UNIT POWER SWITCH (115 VAC, 60 HZ UNIT ONLY)

The Unit power switch, located on back of the Unit, must be in the "ON" (up) position before Unit will operate.

UNIT OPERATION

1. If applicable, make sure drip tray drain hose is routed to a waste container or drain.
2. Make sure Unit power switch (115 VAC, 60 Hz Unit only), located on back side of the Unit, is in the "ON" (up) position.
3. Hold cup or glass under the beer faucet. Pull beer faucet lever forward and dispense until cup or glass is full, then close faucet.

DAILY PRE-OPERATION CHECK

1. Make sure CO₂ cylinder regulator assembly 1800 psi gage indicator is not in shaded ("change CO₂ cylinder") portion of the dial. If so, CO₂ cylinder is almost empty and must be replaced as instructed.
2. Be sure beer supply is sufficient. If not, replenish beer supply as instructed.

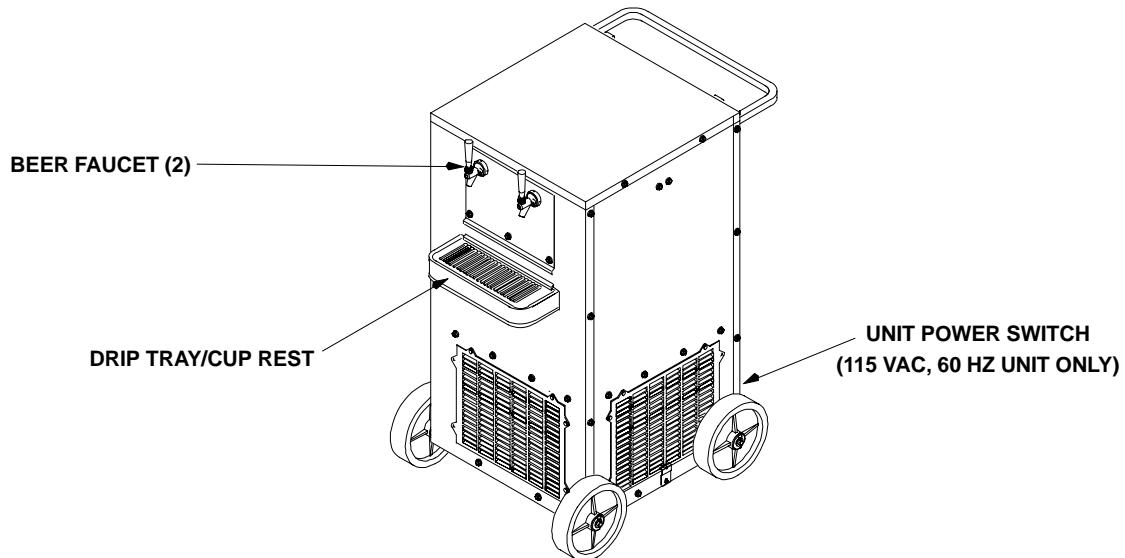


FIGURE 3. 1550 UNIVERSAL BEER DISPENSER

OPERATING CLEARANCES

Check area in front, back, sides, and above the Unit for obstructions. These areas *must* be kept clear at all times. Listed below are the minimum clearances that *must* be maintained.

- A. Clearance above the Unit —————— 12 inches to nearest obstruction.
- B. Clearance back of Unit —————— 12 inches to nearest obstruction.
- C. Clearance on sides of Unit —————— 12 inches to nearest obstruction.
- D. Clearance on front of Unit —————— Open

ADJUSTMENTS

ADJUSTING CO₂ REGULATORS

(see Figure 2)

The CO₂ regulators should be periodically checked for proper pressure settings and if necessary, be adjusted by a qualified Service Person.

ADJUSTING DISPENSED BEER FLOW RATE

Dispensed beer flow rate of the dispensing faucets should be periodically checked and if necessary, be adjusted by a qualified Service Person.

COOLING UNIT MAINTENANCE

CLEANING CONDENSER COIL

NOTE: Air circulation through the condenser coil, required to cool the coil, is drawn in through grille on Unit front panel and is exhausted out through grilles on sides and back of the Unit. Restricting air flow through the condenser coil will decrease cooling efficiency of the Unit.

Area in front, sides, and back of the Unit *must* be kept free of obstructions at all times which would prevent air flow in and out of the Unit.

An excessive accumulation of dust, lint, and grease on the condenser coil will restrict air flow through the coil which will decrease cooling efficiency of the Unit. The Unit condenser coil should be periodically cleaned to maintain cooling efficiency of the Unit. Contact a qualified Service Person to clean the Unit condenser coil.

CHECKING ICE WATER BATH

A gurgle heard from the Unit while it is operating, indicates the water level in the water tank is low and more water should be added to the tank. Contact a qualified Service Person to replenish the water tank water supply and if necessary, also clean the water tank.

CLEANING AND SANITIZING

DAILY CLEANING

The Unit should be cleaned daily as instructed SERVICE AND MAINTENANCE section of this manual.

SANITIZING BEER SYSTEMS

The beer systems (tappers, beer lines, Unit beer cooling coils, and the beer faucets) should be completely sanitized at least every two weeks as instructed in SERVICE AND MAINTENANCE section of this manual.

REPLENISHING CO₂ SUPPLY



WARNING: CO₂ displaces oxygen. Strict attention *must* be observed in the prevention of CO₂ (carbon dioxide) gas leaks in the entire CO₂ and soft drink system. If a CO₂ gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

NOTE: When indicator on CO₂ cylinder regulator assembly 1800 psi gage is in shaded (“change CO₂ cylinder”) portion of dial, CO₂ cylinder is almost empty and should be replaced.

The CO₂ supply should be checked daily and if necessary, replenished as instructed.

REPLENISHING BEER SUPPLY

The beer supply should be checked periodically and if necessary, replenished as instructed.

CLEANING CO₂ SYSTEM GAS CHECK VALVES

(see Figure 2)

The CO₂ gas check must be inspected and serviced as instructed at least once a year under normal conditions and after any servicing or disruption of the CO₂ system.

THIS PAGE LEFT BLANK INTENTIONALLY

SERVICE AND MAINTENANCE

This section describes the service and maintenance procedures to be performed on the Unit.

IMPORTANT: Only qualified Personnel should service the Unit internal components or electrical wiring.



WARNING: Disconnect electrical power from the Unit to prevent personnel injury before attempting any internal maintenance. Only qualified personnel should service the internal components or electrical wiring.

PREPARING UNIT FOR SHIPPING, RELOCATING, OR STORING



CAUTION: Before shipping, relocating, or storing the Unit, the beer cooling coils *must* be sanitized, all sanitizing solution *must* be purged from the beer coils, the ice bank *must* be melted, and all water *must* be drained from the water tank. A freezing ambient environment will cause residual water remaining inside the Unit to freeze resulting in damage to internal components of the Unit.

PERIODIC INSPECTION

1. Check Unit condenser coil (see Figure 5) for accumulation of dust, lint, or grease and if necessary, clean the coil as instructed. Restriction of air flow through the condenser coil will decrease cooling efficiency of the Unit.
2. Check area in front, back, sides, and above the Unit for obstructions. These areas *must* be kept clear at all times. Listed below are the minimum clearances that *must* be maintained.
 - A. Clearance above the Unit —————— 12 inches to nearest obstruction.
 - B. Clearance back of Unit —————— 12 inches to nearest obstruction.
 - C. Clearance on sides of Unit —————— 12 inches to nearest obstruction.
 - D. Clearance on front of Unit —————— Open
3. Check beer faucets for dripping that indicates leaking and repair as necessary.

ADJUSTMENTS

ADJUSTING CO₂ REGULATORS

(see Figure 2)

NOTE: To readjust CO₂ regulator to a lower setting, loosen adjusting screw lock nut, then turn screw to the left (counterclockwise) until pressure gage reads 5-psi lower than new setting will be. Turn adjusting screw to the right (clockwise) until gage registers new setting, then tighten lock nut.

Adjusting Primary CO₂ Regulator.

Adjust primary CO₂ regulator by loosening regulator adjusting screw lock nut, then turn adjusting screw to the right (clockwise) until gage registers 50-psi. Tighten adjustment screw lock nut after adjustment has been completed.

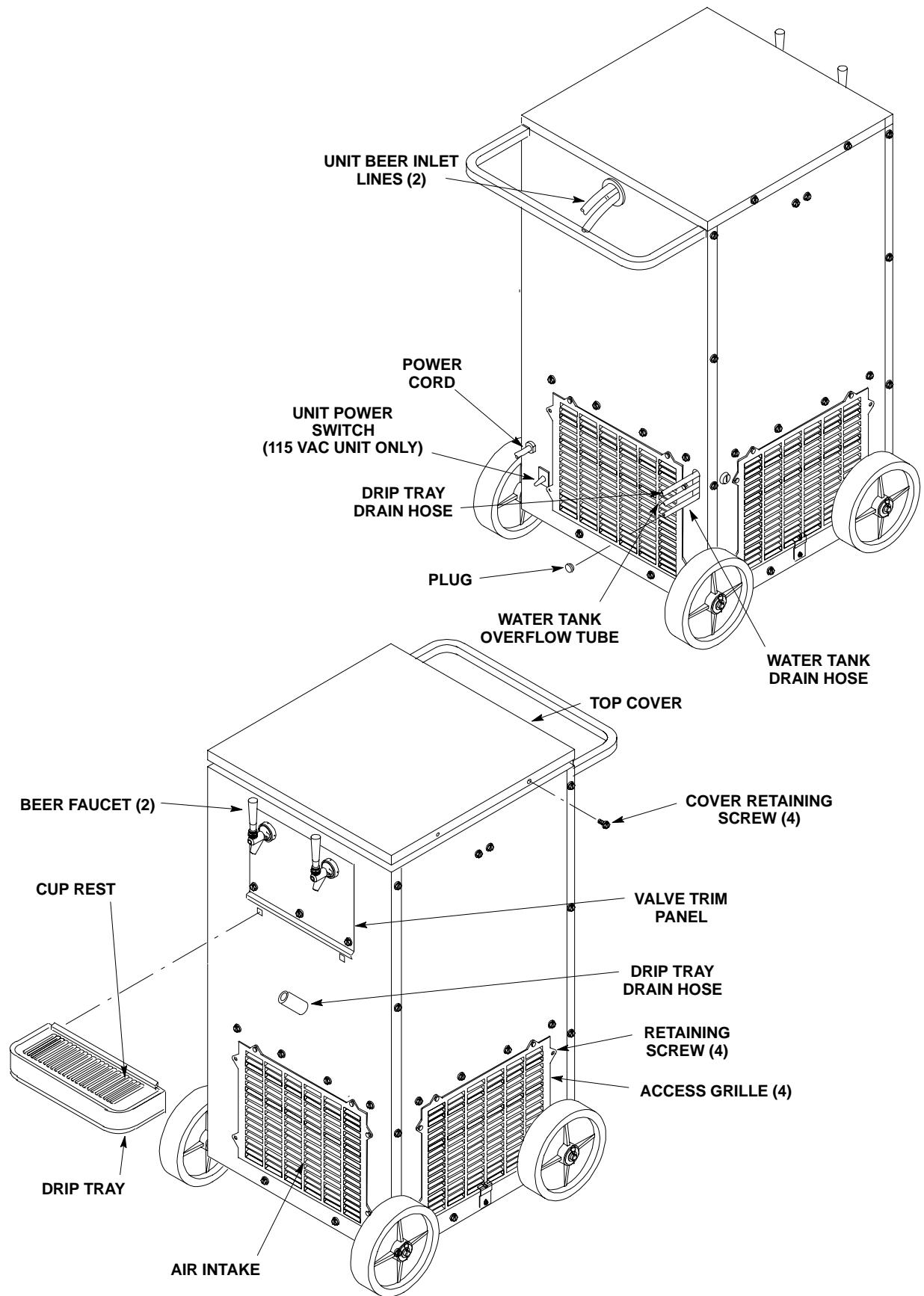


FIGURE 4. DISPENSER COMPONENTS

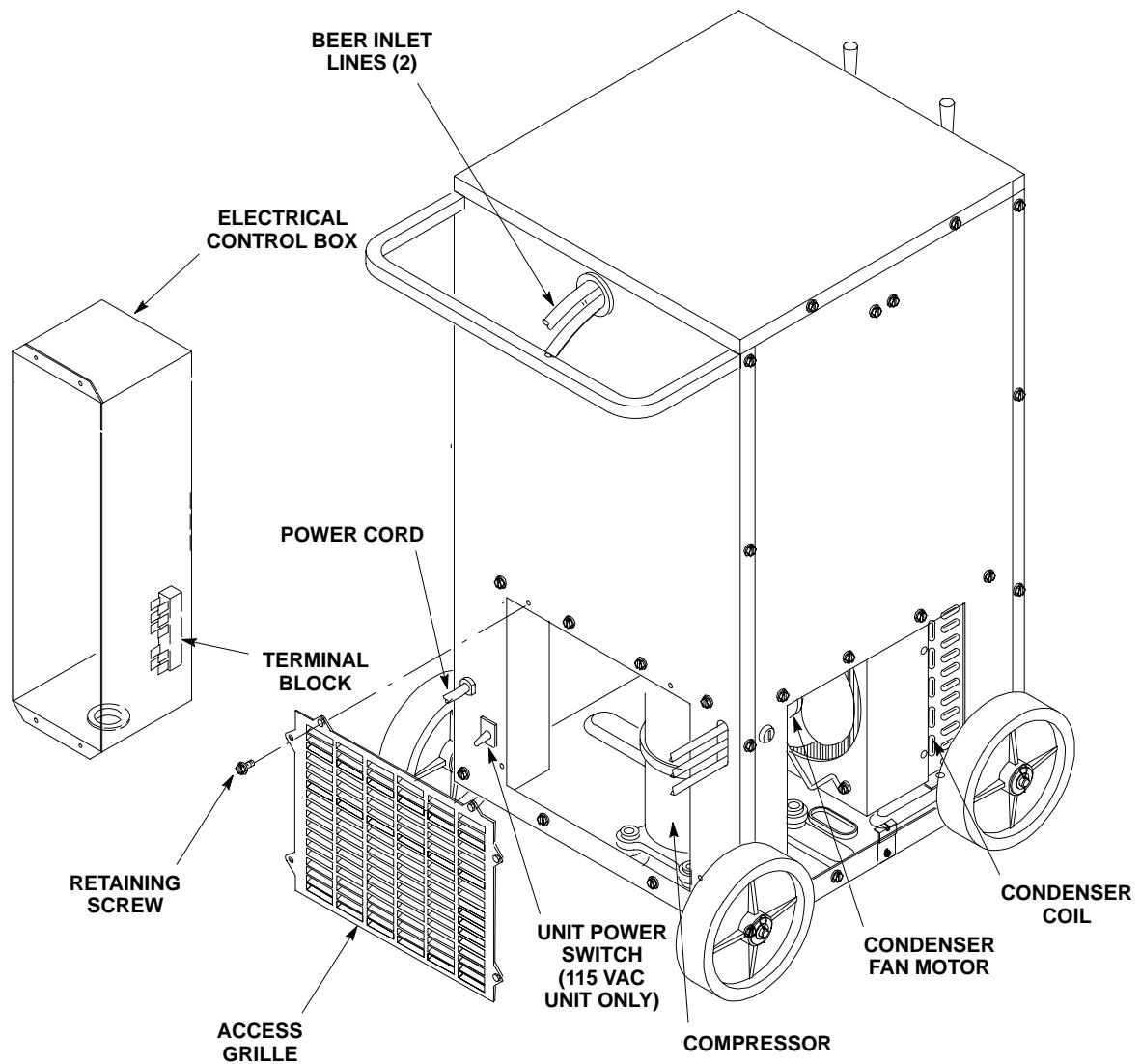


FIGURE 5. PARTS IDENTIFICATION

Adjusting Beer Kegs Secondary CO₂ Regulators.

Beer kegs secondary CO₂ regulators pressures adjustments require calculations of each beer system total beer system pressure. Total beer system pressure, required to push beer from keg to faucet, is the result of computing length of beer line of a certain size, vertical line lift, and internal keg pressure. Internal keg pressure differs from one beer brand to another

Contact your local Beer Distributor for proper secondary CO₂ regulators pressure settings. Adjust secondary CO₂ regulators by loosening adjusting screws lock nuts, then turn adjusting screws to the right (clockwise) until regulator gages register recommended pressures. Tighten adjustments screws lock nuts after adjustments have been completed.

Adjusting Dispensed Beer Flow Rate.

(see Figure 6)

Adjust the beer flow rate at approximately 2-ounces per second by rotating the beer faucet compensator adjustment screw to the left (counterclockwise) for a higher beer flow rate or to the right (clockwise) for a lower beer flow rate.

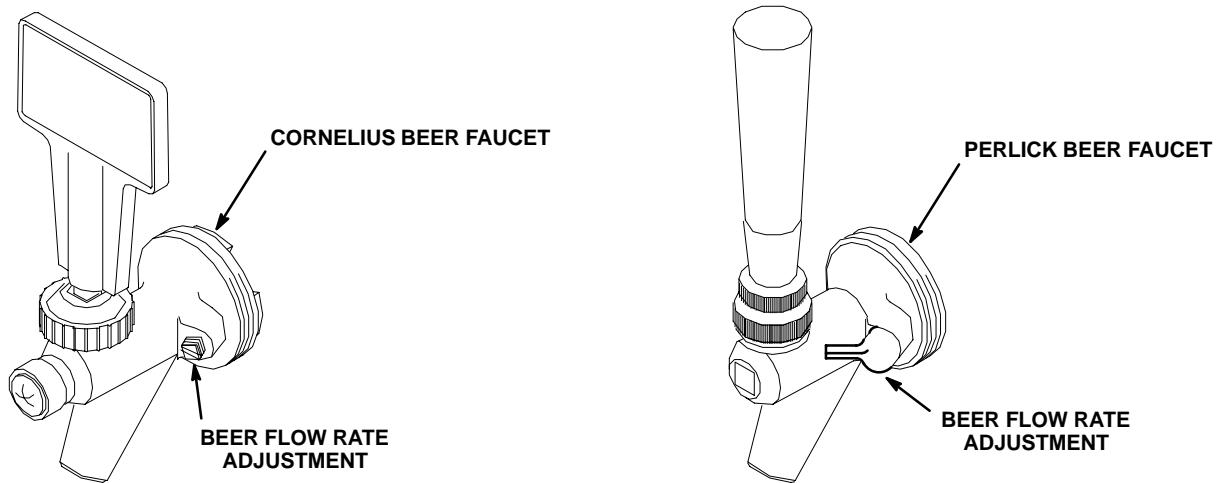


FIGURE 6. BEER FAUCET ADJUSTMENT

UNIT MAINTENANCE

CLEANING CONDENSER COIL

(see Figure 5)

NOTE: Air circulation through the condenser coil, required to cool the coil, is drawn in through grille on Unit front panel and is exhausted out through grilles on sides and back of the Unit. Restricting air flow through the condenser coil will decrease cooling efficiency of the Unit.

Area in front, sides, and back of the Unit *must* be kept free of obstructions at all times which would prevent air flow in and out of the Unit.

An excessive accumulation of dust, lint, and grease on the condenser coil will restrict air flow through the coil which will decrease cooling efficiency of the Unit. The Unit condenser coil should be periodically cleaned by performing the following:

1. Unplug Unit power cord from electrical outlet.

2. Remove four screws securing air intake grille on the Unit front panel, then remove the grille.
3. Vacuum or use a soft brush to clean the condenser coil. If available, use low-pressure compressed air.
4. Install air intake grille on the Unit and secure with four screws.
5. Plug Unit power cord into electrical outlet.

CHECKING ICE WATER BATH

A "gurgle" heard from the Unit, indicates water level in the water tank is low and more water should be added for maximum product cooling. Before adding more water to the water tank, the ice water bath and the ice bank should be checked for cleanliness and the water tank components checked for excessive mineral deposit build-up.

1. Unplug Unit power cord from electrical outlet.
2. Remove four screws securing the Unit top cover, then remove cover.
3. Check condition of the ice water bath and the ice bank. The ice water bath should be clear and the ice bank should be free of foreign particles.
4. Check agitator motor shaft and ice bank sensing bulb for excessive mineral deposit build-up.
5. If cleaning of water tank is necessary, refer to CLEANING WATER TANK in this section for cleaning procedure.
6. Make sure end of water tank overflow tube is placed in a waste container. Fill water tank with clean water until water starts flowing from overflow tube into the waste container. **USE A LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXIST.**
7. Install Unit top cover and secure with four screws.
8. Plug Unit power cord into electrical outlet. After water has stopped dripping from the water tank overflow tube, remove tube from the waste container and place back inside the Unit.

CLEANING WATER TANK

NOTE: The ice water bath should be changed as often as necessary to keep the water tank clean. A convenient time to perform this operation is at the time the Unit is being sanitized. To save time, water can be drained from the water tank while the Unit is being sanitized.

1. Unplug Unit power cord from electrical outlet.
2. Remove screws securing the Unit top cover, then remove cover.
3. Remove four screws securing either the side or the back access grille, then remove the grille.
4. Route water tank drain hose out hole in back of the Unit to a waste container or to a drain.
5. Remove plug from end of the drain hose and allow water to drain from the water tank.

NOTE: If ice bank is clear and contains no foreign particles, it does not have to be melted down. Skip steps 6, 7, and 8 and proceed with step 9 .

6. If ice bank is dirty, allow it to melt. Hot water may be used to speed up melting.



CAUTION: Never use an ice pick or other instrument to remove ice from the evaporator coil. Such practice can result in a punctured refrigerant circuit or damage to the water tank.

7. Wash inside of the water tank with a mild soap solution.

8. Using a fiber brush, carefully clean mineral deposit build-up from the agitator motor shaft and the ice bank sensing bulb.
9. Rinse all parts and flush water tank with clean water.
10. Install plug in end of the water tank drain hose, then place drain hose back inside the Unit.
11. Place end of the Unit water tank overflow tube in a waste container.
12. Fill water tank with clean water until water starts flowing from the overflow tube into the waste container. **USE A LOW-MINERAL-CONTENT WATER WHERE A LOCAL WATER PROBLEM EXIST.**
13. Install Unit top cover and secure with four screws.
14. Plug Unit power cord into electrical outlet. Make sure compressor, condenser fan motor, and agitator motor are operating.
15. After water has stopped dripping from the water tank overflow tube, remove tube from the waste container, then place tube back inside the Unit.
16. Install access grille on the Unit and secure with screws.

CLEANING AND SANITIZING

DAILY CLEANING

NOTE: A drip tray that does not have a drain hose routed to a waste container or a permanent drain *must* be removed from the Unit and be thoroughly cleaned. A drip tray that has a drip tray drain hose routed to a waste container or a permanent drain may be cleaned in place on the Unit as follows:

1. Remove cup rest from the drip tray.
2. Wash drip tray in place on the Unit, then rinse drip tray with hot water allowing water to drain out through the drip tray drain hose.
3. Wash cup rest, then rinse the cup rest with clean water. Install cup rest in the drip tray.
4. Clean all external surfaces of the Unit with a sponge. Rinse out the sponge with clean water, then wring excess water out of the sponge and wipe off all external surfaces of the Unit. Wipe Unit dry with a clean soft cloth. *DO NOT USE ABRASIVE-TYPE CLEANERS.*

SANITIZE BEER SYSTEMS

IMPORTANT: Only qualified Personnel should perform the sanitizing procedure on the beer system.

The beer systems (tappers, beer lines, Unit beer cooling coils, and the beer faucets) should be completely sanitized at least every two weeks using a non-scented household liquid bleach such as Hilex or Chlorox containing a 5.25% sodium hypochlorite concentration. Proceed as follows to sanitize the beer system:

1. Close CO₂ shutoff valve in beer keg tapper CO₂ line, then close beer shutoff valve in beer keg tapper beer line on beer system that will be sanitized.
2. Remove beer keg tapper from the beer keg.
3. Using a clean empty syrup tank, prepare a full tank of non-scented liquid dishwasher detergent solution by using 70° F (21° C) to 100° F (38° C) potable water and 0.5 oz. (15 ml) of liquid dishwasher detergent (such as Joy, Ivory, etc.) to one gallon of potable water. Shake tank containing detergent solution to thoroughly mix the solution.
4. Connect CO₂ line to tank containing detergent solution.

5. Connect tank containing detergent solution into the beer system.
6. Place waste container under applicable beer faucet.
7. Activate the beer faucet to permit detergent solution to purge beer out of the line, coil, and the beer faucet. Continue to dispense until all beer has been purged from the beer system and only detergent solution is dispensed from the beer faucet.
8. Disconnect tank containing detergent solution from the beer system.
9. Using a clean syrup tank, prepare sanitizing solution using 70° F (21° C) to 100° F (38° C) potable water and 0.5 oz. (15 ml) of household liquid bleach such as non-scented Hi-Lex or Chlorox that contains a 5.25 % sodium hypochlorite concentration to one gallon of potable water. This mixture *must* not exceed 200 PPM of chlorine. Shake tank containing sanitizing solution to thoroughly mix the solution.
10. Connect tank containing sanitizing solution into the beer system.
11. Place waste container under the applicable beer faucet.
12. Activate the beer faucet to permit sanitizing solution to purge detergent solution out of the line, coil, and the beer faucet. Continue to dispense until all detergent solution has been purged from the beer system and until only sanitizing solution is dispensed.
13. Allow sanitizing solution to remain in the beer system for not less than 10-minutes or for more than 15-minutes.
14. Disconnect tank containing sanitizing solution from the beer system.



WARNING: Flush all sanitizing solution from the beer system as instructed. Residual sanitizing solution left in the beer system could create a health hazard.

15. Connect tank containing potable water into the beer system.
16. Place waste container under the applicable beer faucet.
17. Activate the beer faucet to permit potable water to purge sanitizing solution out of the beer system. Continue to dispense until all sanitizing has been purged from the beer system and only potable water is dispensed.
18. Disconnect tank containing potable water from the beer system.
19. Place the beer keg tapper in a pail container containing sanitizing. Completely wash the beer keg tapper in the sanitizing solution, then thoroughly rinse the tapper with potable water.
20. Install beer keg tapper in beer keg.
21. Open CO₂ shutoff valve in beer keg tapper CO₂ line, then open beer shutoff valve in beer keg tapper beer line.
22. Place waste container under applicable beer faucet. Dispense from beer faucet until all potable water has been purged from the beer system and only beer is dispensed.
23. Repeat preceding steps 1 through 22 to sanitize the other beer system.

REPLENISHING CO₂ SUPPLY

NOTE: When indicator on CO₂ cylinder regulator assembly 1800 psi gage is in shaded ("change CO₂ cylinder") portion of dial, CO₂ cylinder is almost empty and should be replaced.



CAUTION: Wear protective eyewear to avoid injury from gas-driven particles.



WARNING: CO₂ displaces oxygen. Strict attention *must* be observed in the prevention of CO₂ (carbon dioxide) gas leaks in the entire CO₂ and soft drink system. If a CO₂ gas leak is suspected, particularly in a small area, *immediately* ventilate the contaminated area before attempting to repair the leak. Personnel exposed to high concentration of CO₂ gas will experience tremors which are followed rapidly by loss of consciousness and suffocation.

1. Fully close (clockwise) CO₂ cylinder valve.
2. Slowly loosen CO₂ regulator assembly coupling nut allowing CO₂ pressure to escape, then remove regulator assembly from empty CO₂ cylinder.
3. Unfasten safety chain and remove empty CO₂ cylinder.



WARNING: To avoid personal injury and/or property damage, always secure CO₂ cylinder in an upright position with safety chain to prevent it from falling over. Should the shutoff valve become accidentally broken off, CO₂ cylinder can cause serious personal injury.

4. Position CO₂ cylinder and secure with safety chain.
5. Make sure gasket is in place inside CO₂ regulator coupling nut, then install regulator on CO₂ cylinder.
6. Open (counterclockwise) CO₂ cylinder valve slightly to allow lines to slowly fill with gas, then open valve fully to back-seat valve. (Back-seating valve prevents leakage around valve shaft).
7. Check CO₂ connections for leaks.

REPLENISHING BEER SUPPLY

(see Figure 2)

1. Close CO₂ and beer line shutoff valves for the empty beer keg.
2. Remove beer keg tapper from the empty beer keg.
3. Make sure beer keg tapper and top of the full beer keg are clean, then install tapper in the keg.
4. Open CO₂ and beer line shutoff valves.

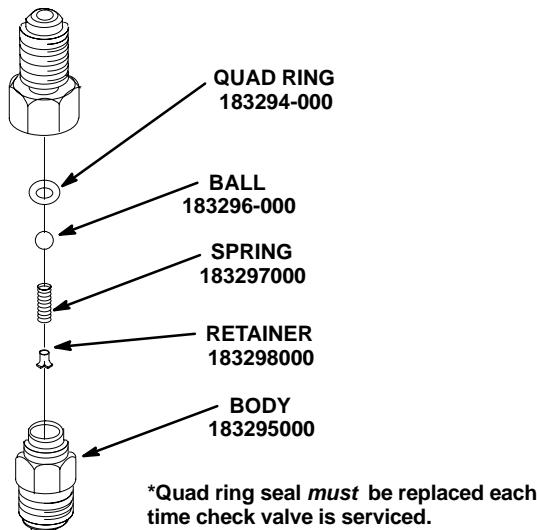


FIGURE 7. CO₂ GAS CHECK VALVE

CLEANING CO₂ GAS CHECK VALVE

(see Figures 2 and 7)

CO₂ gas check valves must be inspected and serviced at least once a year under normal conditions and after any servicing or disruption of the CO₂ system. ALWAYS REPLACE QUAD RING SEALS EACH TIME CHECK VALVES ARE SERVICED.

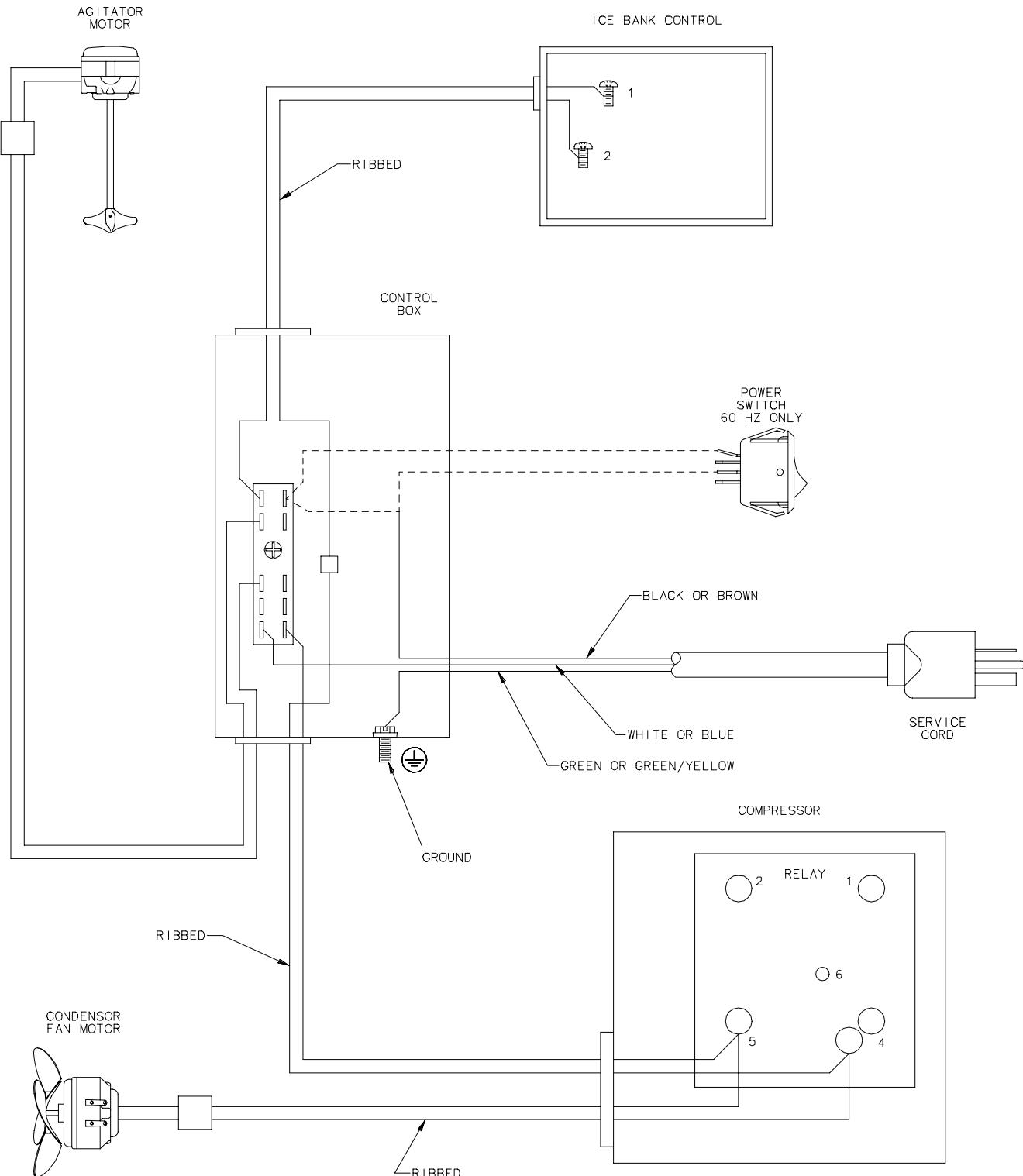


FIGURE 8. WIRING DIAGRAM

TROUBLESHOOTING

IMPORTANT: Only qualified Personnel should service internal components or electrical wiring.



WARNING: If repairs are to be made to the beer system, close shutoff valve in applicable beer inlet line, then relieve system pressure before proceeding. If repairs are to be made to the CO₂ system, shut off CO₂ supply, shut off beer keg tappers CO₂ lines shutoff valves, then relieve system pressure before proceeding. If repairs are to be made to the refrigeration system, *make sure electrical power is disconnected from the Unit.*

Trouble	Probable Cause	Remedy
TROUBLESHOOTING CO₂ SYSTEM		
NO CO ₂ GAS PRESSURE ON BEER SYSTEMS.	A. Empty CO ₂ cylinder. B. CO ₂ shutoff valve closed at CO ₂ cylinder. C. CO ₂ shutoff valves in lines leading to beer kegs tappers closed. D. CO ₂ regulators improperly adjusted. E. Leak in CO ₂ system.	A. Replenish CO ₂ supply as instructed. B. Open CO ₂ shutoff valve at CO ₂ cylinder. C. Open CO ₂ shutoff valves in lines leading to beer kegs tappers. D. Adjust CO ₂ regulators as instructed. E. Repair leaks in CO ₂ system.
INSUFFICIENT CO ₂ GAS PRESSURE ON BEER SYSTEMS.	A. Empty CO ₂ cylinder. B. CO ₂ shutoff valve in CO ₂ system partially closed. C. CO ₂ regulator improperly adjusted. D. Leak in CO ₂ system.	A. Replenish CO ₂ supply as instructed. B. Open CO ₂ shutoff valve all the way. C. Adjust CO ₂ regulator as instructed. D. Repair leak in CO ₂ system.
Trouble	Probable Cause	Remedy
TROUBLESHOOTING BEER SYSTEM		
DISPENSED BEER FLOW RATE TOO LOW.	A. Beer faucet not properly adjusted for beer flow rate. B. Insufficient CO ₂ /gas pressure on beer system.	A. Adjust dispensed beer flow rate as instructed. B. Refer to "INSUFFICIENT CO ₂ GAS PRESSURE ON BEER SYSTEM" in this section.

Trouble	Probable Cause		Remedy
DISPENSED BEER FLOW RATE TOO HIGH.	A. Beer faucet not properly adjusted for beer flow rate.	A. Adjust dispensed beer flow rate as instructed.	
OFF-TASTE BEER (SOUR AND UNPALATABLE).	A. Beer system needs to be cleaned and sanitized. B. Beer spoilage (secondary fermentation) due to inadequate beer storage C. Mixed beers.	A. Clean and sanitize beer system as instructed. B. Rotate stock. <i>Make sure</i> oldest beer in stock is used first. C. Clean and sanitize beer system, then install new beer supply.	
DISPENSED BEER FLAT (DISAPPEARING FOAM).	A. Dirty beer glasses. B. CO ₂ regulators improperly adjusted.	A. Glasses must be free of all film. B. Adjust CO ₂ regulators as instructed.	
DISPENSED BEER TEMPERATURE TOO WARM	A. Electrical power Unit turned off. B. Unit power switch (115 VAC, 60 Hz Unit only) turned "OFF". C. Electrical circuit fuse blown or circuit breaker tripped. D. Glycol circulating pump power switch in "OFF" (down) position or inoperable pump or motor. E. Cooling Unit POWER switch in "OFF" (down) position. F. Inoperable Cooling Unit refrigeration system.	A. Restore electrical power to Unit. B. Make sure power switch is turned "OFF". C. Replace blown fuse or reset circuit breaker. D. Make sure circulating pump power switch is in "ON" (up) position or repair or replace pump or motor. E. Place Cooling Unit POWER switch in "ON" (up) position. F. Repair Cooling Unit refrigeration system.	
EXCESSIVE FOAMING (WILD BEER) WHILE BEER IS BEING DISPENSED.	A. Dispensed beer flow rate too high. B. Dispensed beer temperature too warm.	A. Beer flow rate should be approximately 2-ounces per second. Adjust beer flow rate as instructed. B. Refer to "DISPENSED BEER TEMPERATURE TOO WARM" in this section.	

Trouble	Probable Cause	Remedy
TROUBLESHOOTING COOLING UNIT REFRIGERATION SYSTEM		
COMPRESSOR DOES NOT OPERATE.	<p>A. Glycol (coolant) sufficiently cooled.</p> <p>B. Cooling Unit POWER switch in "OFF" (down) position.</p> <p>C. No power source (blown fuse or tripped circuit breaker).</p> <p>D. Low voltage.</p> <p>E. Loose, disconnected, or broken wiring.</p> <p>F. Overload protector cut out; overheated compressor. Condenser fan motor not operating as required.</p> <p>G. Inoperative overload protector or start relay.</p> <p>H. Inoperative contactor.</p> <p>I. Inoperative control board.</p> <p>J. Evaporator or condenser outlet temperature sensor inoperative (open).</p> <p>K. No voltage to control board.</p> <p>L. Inoperative compressor.</p>	<p>A. Refrigeration not called for.</p> <p>B. Place Cooling Unit POWER switch in "ON" (up) position.</p> <p>C. Replace blown fuse or reset circuit breaker.</p> <p>D. Voltage must be at least 103 VAC at compressor terminals when compressor is trying to start.</p> <p>E. Tighten connections or replace broken wiring.</p> <p>F. Compressor will cool enough to restart. Refer to "CONDENSER FAN MOTOR NOT OPERATING" in this section;</p> <p>G. Replace inoperative part.</p> <p>H. Replace contactor.</p> <p>I. Replace control board.</p> <p>J. Replace inoperative temperature sensor.</p> <p>K. Check for loose or broken wiring. Check transformer for 24 ± 1 VAC output.</p> <p>L. Replace compressor.</p>
COMPRESSOR WILL NOT STOP AFTER GLYCOL (COOLANT) HAS BEEN SUFFICIENTLY COOLED.	<p>A. Glycol tank temperature control inoperative.</p> <p>B. Circuit board inoperative.</p>	<p>A. Replace temperature control sensor.</p> <p>B. Replace circuit board.</p>
COMPRESSOR OPERATES CONTINUOUSLY BUT DOES NOT COOL GLYCOL (COOLANT) SUFFICIENTLY.	<p>A. Cooling Unit located in excessively hot area.</p> <p>B. Air circulation through Cooling Unit restricted.</p>	<p>A. Refer to IMPORTANT note at start of SELECTING COOLING UNIT LOCATION in INSTALLATION SECTION.</p> <p>B. Clean air filter on back of Cooling Unit as instructed.</p>
CONDENSER FAN MOTOR NOT OPERATING.	<p>A. Jumper cord loose or disconnected from condenser fan motor or compressor terminals. Broken wire in cord.</p> <p>B. Fan blade obstructed.</p> <p>C. Inoperative condenser fan motor.</p>	<p>A. Tighten connections or replace cord.</p> <p>B. Remove obstruction.</p> <p>C. Replace condenser fan motor.</p>
<p>NOTE: If overload protector cuts out compressor, condenser fan motor will continue to operate; otherwise, troubleshooting condenser fan motor problems are same as for "COMPRESSOR DOES NOT OPERATE" paragraph plus the preceding:</p>		

Trouble	Probable Cause	Remedy
REFRIGERATION COMPRESSOR NOT OPERATING	<p>A. Refrigeration system overheated. Clogged condenser coil air intake filter.</p> <p>B. Refrigeration system overheated. Condenser fan motor not operating.</p> <p>C. Glycol tank temperature control sensor inoperable. Loose or broken sensor electrical wire.</p> <p>D. Glycol tank temperature control sensor inoperable, Inoperable sensor.</p>	<p>A. Clean air filter as instructed.</p> <p>B. Replace condenser fan motor.</p> <p>C. Check or repair sensor electrical wire.</p> <p>D. Replace sensor.</p>



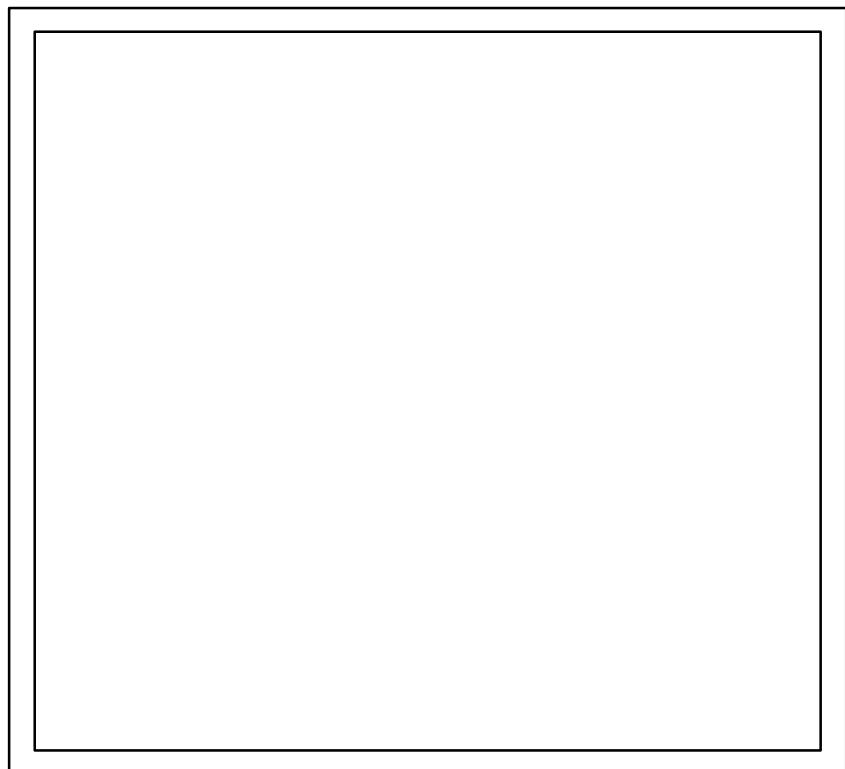
IMI CORNELIUS INC.
ONE CORNELIUS PLACE
ANOKA, MN. 55303-6234
TELEPHONE (800) 238-3600
FACSIMILE (612) 422-3232

WARRANTY

IMI Cornelius Inc. warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. For a copy of the warranty applicable to your Cornelius product, in your country, please write, fax or telephone the IMI Cornelius office nearest you. Please provide the equipment model number and the date of purchase.

IMI Cornelius Offices

AUSTRALIA • P.O. 210, • RIVERWOOD, • NSW 2210, AUSTRALIA • (61) 2 533 3122 • FAX (61) 2 534 2166
AUSTRIA • AM LANGEN FELDE 32 • A-1222 • VIENNA, AUSTRIA • (43) 1 233 520 • FAX (43) 1-2335-2930
BELGIUM • BOSKAPELLEI 122 • B-2930 BRAASCHAAT, BELGIUM • (32) 3 664 0552 • FAX (32) 3 665 2307
BRAZIL • RUA ITAOCARA 97 • TOMAS COELHO • RIO DE JANEIRO, BRAZIL • (55) 21 591 7150 • FAX (55) 21 593 1829
ENGLAND • TYTHING ROAD ALCESTER • WARWICKSHIRE, B49 6 EU, ENGLAND • (44) 789 763 101 • FAX (44) 789 763 644
FRANCE • 71 ROUTE DE ST. DENIS • F-95170 DEUIL LA BARRE • PARIS, FRANCE • (33) 1 34 28 6200 • FAX (33) 1 34 28 6201
GERMANY • CARL LEVERKUS STRASSE 15 • D-4018 LANGENFELD, WEST GERMANY • (49) 2173 7930 • FAX (49) 2173 77 438
GREECE • 488 MESSOGION AVENUE • AGIA PARASKEVI • 153 42 • ATHENS, GREECE • (30) 1 600 1073 • FAX (30) 1 601 2491
HONG KONG • 1104 TAIKOTSUI CENTRE • 11-15 KOK CHEUNG ST • TAIKOKTSUE, HONG KONG • (852) 789 9882 • FAX (852) 391 6222
ITALY • VIA PELLIZZARI 11 • 1-20059 • VIMARCA, ITALY • (39) 39 608 0817 • FAX (39) 39 608 0814
NEW ZEALAND • 20 LANSFORD CRES. • P.O. BOX 19-044 AVONDALE • AUCKLAND 7, NEW ZEALAND • (64) 9 8200 357 • FAX (64) 9 8200 361
SINGAPORE • 16 TUAS STREET • SINGAPORE 2263 • (65) 862 5542 • FAX (65) 862 5604
SPAIN • POLIGONO INDUSTRAIL • RIERA DEL FONOLLAR • E-08830 SANT BOI DE LLOBREGAT • BARCELONA, SPAIN • (34) 3 640 2839 • FAX (34) 3 654 3379
USA • ONE CORNELIUS PLACE • ANOKA, MINNESOTA • (612) 421-6120 • FAX (612) 422-3255



IMI CORNELIUS INC.

CORPORATE HEADQUARTERS:

One Cornelius Place
Anoka, Minnesota 55303-6234
(612) 421-6120
(800) 238-3600